



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,441	04/27/2006	Bong-gi Kim	102-1652T	3429
38209	7590	07/19/2010	EXAMINER	
STANZIONE & KIM, LLP 919 18TH STREET, N.W. SUITE 440 WASHINGTON, DC 20006			CHOW, VAN NGUYEN	
			ART UNIT	PAPER NUMBER
			2627	
			MAIL DATE	DELIVERY MODE
			07/19/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,441	Applicant(s) KIM ET AL.	
	Examiner Van N. Chow	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 13-17 and 26-28 is/are rejected.
- 7) ☒ Claim(s) 5-12, 18-25, 29 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 2010 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 13-14, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoo et al. (US 2002/0021649) in view of Applicant Admitted Prior Art Fig. 1 (hereinafter AAPA).

Regarding claim 1, Yoo et al. discloses an optical pickup apparatus comprising:

a light source module having a first light source and a second light source which emit light rays of different wavelengths to record/reproduce data on/from recording media having different standards, the first light source emitting light rays for a first recording medium and the second light source emitting light rays for a second recording medium, the light source module operating a selected one of the first and the second light sources (see fig. 2, element 50, a first light source 55 is a DVD with wavelength 650nm, a second light source 57 is a CD with wavelength 780nm. The optical pickup includes a light device module 50, which includes first and second light beam sources 55 and 57 to emit a first light beam I and a second light beam II having different respective wavelength);

an object lens arranged to focus light rays emitted from the selected light source to form an optical spot on a predetermined position of a recording surface of a recording medium (see fig. 2, an objective lens 67 to focus incident light on an optical recording medium 80);

a light splitting element arranged to transmit a part of the light rays emitted from the selected light source and reflect the remaining light rays to oppose to the object lens, the light

Art Unit: 2627

splitting element transmitting all of the light rays reflected from the recording medium (see fig. 2, an optical path changing unit 63 to selectively alter the optical path of incident light);

a collimating lens arranged on a light path formed between the light splitting element and the object lens to convert the light rays into parallel light rays (see fig. 2, collimator lens 66 to collimate incident light);

a hologram module splits a light which is incident to the recording medium (see fig. 2, a hologram light coupler 61 by which the first and second light beams I and II are guided to travel along the same optical path, and response below); and

a photo-detector having a sensor for the first/second recording medium for receiving light rays that are reflected from the recording medium and passed through the hologram module and detecting an information signal and an error signal (a photodetector 71 to receive light passed through the objective lens 67).

AAPA discloses a hologram module arranged on a light path between the collimating lens and the object lens to split a light which is incident to the recording medium into plurality of beams (see fig. 1, collimator lens 40, HOE 50 and objective lens 60, [0008]).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a hologram module arranged on a light path between the collimating lens and the object lens in Yoo et al. as suggested by AAPA, the motivation being in order to split a light which is incident to a disk 100 to a plurality of beams (see AAPA [0008]-[009]).

Regarding claims 13 and 26, see rejection above of claim 1, respectively.

Regarding claim 14, the combination of Yoo et al. and AAPA, discloses the optical pickup apparatus as claimed in claim 13, wherein the first and second light sources are packaged in a single module and originated from a dual wavelength laser diode which generates light rays having one of a wavelength of 650 nm for recording/reproducing data on/from a DVD-family optical disk and a wavelength of 780 nm for recording/reproducing data on/from a CD-family optical disk (see Yoo et al. see rejection above of claim 1 and [0031]-[0032]).

3. Claims 2-3, 15-16 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoo et al. (US 2002/0021649), Applicant Admitted Prior Art Fig. 1 (hereinafter AAPA) in view of Lee et al. (US 2003/0235127).

Regarding claim 2, the combination of Yoo et al. and AAPA, discloses the optical pickup apparatus as claimed in claim 1, further comprising: a sensor lens arranged on a front surface of the photo-detector for adjusting the light rays reflected from the recording medium to be incident on the photo-detector with a predetermined size (see Yoo et al., fig. 2, element 69).

Lee et al. discloses a monitor photo-detector arranged to receive light rays that pass through the light splitting element and monitor the light rays to adjust a magnitude of the light emitted from the first and the second light sources (see Lee et al. fig. 1, [0037], monitor photodetector 45, controls the amount of the light power output from the light source 10 and in the event that the light source 10 is two light sources, the optical pickup may include a light source module having a package in which the two light sources, respectively, emitting the light beam having the 650 nm wavelength suitable for the DVD and the light beam having the 780 nm wavelength suitable for the CD form a single body).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide monitor photodetector 45 in Yoo et al. and AAPA, as suggested by Lee et al., the motivation being in order to controls the amount of the light power output from the light source (see Lee et al. [0034]).

Regarding claim 3, the combination of Yoo et al., AAPA and Lee et al., discloses the optical pickup apparatus as claimed in claim 2, wherein the hologram module comprises: a polarized light hologram formed in a circular pattern to split only predetermined polarized light rays; and a 1/4-wavelength plate arranged on a surface of the polarized light hologram opposite to the object lens for turning a phase of the polarized light rays by 90.degree. (see AAPA fig. 2, the polarized light hologram element 50 is designed to operate in response to the wavelength of light rays emitted from the second light source 20, i.e., in a DVD mode. In addition, the polarized light hologram element 50 operates only in response to the p-polarized light. The polarized light hologram element 50 has a 1/4-wavelength plate formed on a surface thereof opposing to the disk 100 so that the polarized light hologram element 50 can convert an incident s-polarized light into a circularly polarized light and convert a reflection light from the disk 100 to the p-polarized light. Only the light containing a p-polarized light, which is emitted from the second light source 20 and reflected from the disk 100, is split into 10 beams by the polarized light hologram element 50).

Regarding claims 15-16, see rejection above of claims 2-3, respectively.

Regarding claim 27, see rejection above of claim 3.

4. Claims 4, 17, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoo et al. (US 2002/0021649), Applicant Admitted Prior Art Fig. 1 (hereinafter AAPA), Lee et al. (US 2003/0235127) in view of Ogasawara et al. (US 2004/0105374).

Regarding claim 4, the combination of Yoo et al., AAPA, and Lee et al., discloses the optical pickup apparatus as claimed in claim 3, wherein the polarized light hologram diffracting the light by a predetermined angle with respect to an optical axis of the light to thereby generate zero-order and ± 1 order beams (see Yoo et al. fig. 5).

Ogasawara et al. discloses a polarized light hologram is divided into a first hologram and a second hologram which are operated in response to the light rays emitted from the first light source, the first and the second holograms being formed on the same plane in a semicircular shape and located one on the other (see Ogasawara et al. fig. 8c, the single hologram lens 17 is produced to have two semicircular hologram regions 17a and 17b. Moreover, the hologram is operated in response to the light rays emitted from the first light source, which is DVD, see [0038]).

Nagahara et al. discloses a grating 13 has a structure wherein two diffraction grating parts 13a and 13b are combined with each other. The grating parts 13a and 13b each have slit-like grating elements formed thereon, the directions of which have different angles with respect to the light beam when viewed in the vertical direction in FIG. 4A. Therefore, the light beam that has entered the grating 13 is divided into five light beams. The incident light L that enters the grating 13 is divided into five light beams by the grating 13. Specifically, the grating 13 causes the emission of five, in total, light beams, including the 0th order diffracted light, the ± 1 st order

Art Unit: 2627

diffracted lights produced by the grating part 13a, and the ± 1 st order diffracted light produced by the grating part 13b (see fig. 3 and [0059], And [0063]).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a single hologram lens is produced to have two semicircular hologram regions of Ogasawara et al. and incident light that enters the grating is divided into five light beams of Nagahara et al. in Yoo et al. and AAPA, the motivation being in order to five different light spots are formed on the information recording surface of the disc (see Nagahara et al. [0063]).

Regarding claims 17, 28, see rejection above of claim 4, respectively.

Allowable Subject Matter

5. Claims 5-12 and 18-25, 29-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the references cited in record disclose or suggest all the limitations in the claims 5-12 and 18-25, 29-30.

Response to Arguments

Applicant's arguments filed 06/10/2010 have been fully considered but they are not persuasive.

Applicant argued that the combination of Yoo and AAPA does not disclose a hologram module arranged on a light path between the collimating lens and the object lens to split a light which is incident to the recording medium, which is incorrect. Yoo discloses a hologram module, which splits a light is incident to the recording medium into a plurality of beams (see fig. 2, a

Art Unit: 2627

hologram light coupler 61 by which the first and second light beams I and II are guided to travel along the same optical path, see figs. 3-13, hologram 61, guides the first and second light beams I and II along the same optical path and directs the first and second light beams I and II toward the optical recoding medium 80. And FIG. 3 illustrates an example of the hologram pattern 61a having five steps, and FIG. 4 illustrates variations of transmittance of the first and second light beams I and II with respect to the variations of maximum pattern depth $D_{sub.P}$ of the hologram pattern 61a of FIG. 3. Referring to FIG. 4, at a maximum pattern depth $D_{sub.P}$ of about 6,400 nm, the transmittance of the hologram light coupler 61 is about 1.0 for the principle zeroth order maximum of the first light beam I having a 650 nm wavelength. The second light beam II is diffracted and transmitted into zeroth order and 1st order diffracted beams. As shown in FIG. 5, the transmittance of the hologram light coupler 61 is about 8% for the zeroth order diffracted beam, almost 0% for the +1st order diffracted beam, and about 75% for the -1st order diffracted beam with respect to the amount of the incident light. The -1st order diffracted beam serves as the effective beam for the second light beam II, and travels parallel to the zeroth order diffracted beam from the first light beam I. While the -1st order light of the second light beam II is shown in FIG. 5 as being slightly non-parallel to the 0th order light of the first light beam I, this non-parallel depiction is for the purposes of clarity. However, the hologram does not arrange on a light path between the collimator lens and the objective lens, which cures by the AAPA fig. 1. And AAPA discloses [0008] a polarized light hologram element 50 arranged to split a light which is incident to a disk 100 to a plurality of beams.

Moreover, Applicant argued that the hologram arranged in between the mirror 45 and objective lens 60 not the collimator lens and the objective lens, which is incorrect. The claim

Art Unit: 2627

only recites "between" which is a broad term, as long as the hologram is between the collimator lens and the objective lens, which will meet the claim; the claim does not recite only the hologram is between the collimator lens and objective lens or the light path is directly incident from collimator lens to the hologram and from the hologram to the recording medium.

Also, Applicant argued that the combination of Yoo and AAPA does not disclose independent claims 1, 13 and 26, therefore, all dependent claims are allowable fall with parent. However, the combination of Yoo and AAPA at least discloses claims 1, 13 and 26. Therefore, claims 14, 2-3, 15-16, 27, 4, 17 and 28 are not allowable since the parent claim is not allowed yet.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2627

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN N. CHOW whose telephone number is (571)272-7590. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne R. Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Van N. Chow/
Primary Examiner, Art Unit 2627